



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/643,159

08/18/2003

Otman A. Basir

60,449-079

3564

26096 7590 09/02/2008  
CARLSON, GASKEY & OLDS, P.C.  
400 WEST MAPLE ROAD  
SUITE 350  
BIRMINGHAM, MI 48009

EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT

PAPER NUMBER

2836

MAIL DATE

DELIVERY MODE

09/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 7/15/08 have been fully considered but they are not persuasive.

Applicant first argues Witney does not teach or suggest a bridge circuit that is "balanced" and "unbalanced" as recited in claim 1. Applicant cites the circuit in Witney changes frequency based upon the presence of a hand, but is always oscillating.

In response, the limitation "balanced" is not limited to a state of no oscillation. A steady state may be considered a balanced state, even in the presence of oscillation, see for example where Witney teaches the initial state is "quite stable" in col. 5 line 8. An increase or decrease from steady state, as seen in frequency change of Witney for example constitutes a non-steady state or *unbalanced* state. Applicant is directed the relevant section of the MPEP regarding claim interpretation (reproduced below in relevant part)

#### MPEP 2111 [R-5] Claim Interpretation: Broadest Reasonable Interpretation

During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard

Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be

interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969)

Applicant secondly argues the rejection to claim 12 of Schulz in view of Ladewig.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., operating a vehicle horn) are not recited in the rejected claim(s), rather the claim only requires "A method for determining a presence of a user hand". Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Lastly Applicant argues claim 21. Applicant argues "enabling the vehicle horn based upon the change in capacitance indicating that the hand is present" and "disabling the vehicle horn based upon the change in capacitance indicating that the hand is not present." is not taught by Ladewig in view of Schulz.

In response, Ladewig teaches the limitations of claim 12-21 for example, however does not cite the measuring of the rate of change in permittivity. Schulz is cited to illustrate the measuring of rate of change in permittivity is a known measurement in determining the presence of a user hand. It remains the position of the Office it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ladewig to measure the rate of change in order to reduce the possibility of false detection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 6, 8-11 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Witney et al. (U.S. Pat. No. 4,323,829)

With respect to claims 1 and 10-11 and 34-36, Witney teaches a user-activated switch comprising: an electrode (see Fig. 2A items 26 and 24) forming part of a capacitor (capacitance sensors RF, RR, LF and LR) a user contact area (area for finger(s) or palm seen perhaps best in Fig. 1) adjacent the electrode defining a permittivity of the capacitor; a detection circuit (see Fig. 3) measuring a capacitance of the capacitor and activating a switch (state of U4) based upon the measured capacitance, the detection circuit including a bridge circuit (see resistors R1-R4 and capacitors connected to electrode, further see col. 6 lines 33-50) including the electrode, the bridge circuit being balanced (col. 5 lines 5-10) when no user hand is detected near the electrode, the bridge circuit becoming unbalanced (col. 6 lines 15-20) based upon the presence of a user hand near the electrode; and differential amplifier (item U7) determining when the bridge circuit is unbalanced, the differential amplifier and activating and deactivating the switch based upon whether the bridge circuit is balanced.

With respect to claim 2 Witney teaches the electrode may be within the vehicle (wheelchair)

With respect to claim 6 Witney teaches the use of an oscillator (U3) used to excite the bridge circuit.

With respect to claim 8 Witney teaches the electrode is mounted adjacent a user manual contact area.

With respect to claim 9 Witney teaches the electrode is mounted adjacent a user hand grip area (see Fig. 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable by Witney et al. (U.S. Pat. No. 4,323,829) Witney teaches the electrode is located on a steering device (item 10) however does embody the steering device as a wheel. Witney teaches (col. 4 lines 5-10) the sensing surfaces to be of nearly any geometric shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Witney to use a circular or wheel shaped arrangement of the sensing surfaces in order to allow the user to quickly adapt to the steering system.

Claims 3-4 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable by Witney et al. (U.S. Pat. No. 4,323,829) in view of Ladewig (U.S. Pat. No. 3,876,977) Witney teaches the switch is for activating a vehicle device however does not include the use of a horn. Ladewig teaches the use of a proximity switch arrangement for a horn (Fig. 1 and 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Witney to include the use of a switch circuit to activate a vehicle horn as seen in Ladewig in order to signal to persons or vehicles the approaching of vehicle of Witney.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable by Witney et al. (U.S. Pat. No. 4,323,829) in view of Schulz (U.S. Pat. No. 5,880,538)

With respect to claim 7 Witney teaches capacitor switch however does not teach the use of a rate of change of the capacitance. Schulz teaches (column 2 lines 1-12 the rate of change in the capacitance which is caused by the hands altering of the electric field by changing the permittivity approximate the sensor is monitored to determine if it is within a threshold indicative of a user's hand) measuring a rate of change of the capacitance. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Witney to measure the rate of change of the capacitance in order to reduce a false detection.

Claims 12, 21, 24-27 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable by Schulz (U.S. Pat. No. 5,880,538) in view of Ladewig (U.S. Pat. No. 3,876,977)

With respect to claims 12 Schulz teaches a method for determining a presence (Fig. 1) of a user hand including the steps of: a) measuring a rate of change (column 2 lines 1-12 the rate of change in the capacitance which is caused by the hands altering of the electric field by changing the permittivity approximate the sensor is monitored to determine if it is within a threshold indicative of a user's hand) in permittivity of an area adjacent an electrode caused by the proximity of the user hand; and b) activating a switch (lock/unlock switch for example) based upon the rate of change measure in said step a). Schulz teaches the capacitive sensor switch may be provided on an object, Schulz provides several examples of uses for the capacitive proximity switch and further points out one skilled in the art should appreciate the system not be limited to the described embodiments (col. 1 lines 45-50 also lines 30-35). Shultz however fails to teach the activation of a vehicle horn as a connected device. Ladewig teaches a vehicle horn that is activated based on a switch signal (Fig. 1 or 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to connect the proximity capacitance switch of Schulz to activate the vehicle horn when a hand is moved toward or approaches the activation area to provide an audible signal for safety which may be quickly activated with little or no mechanical wear to the horn switch.

With respect to claim 24 Schulz teaches an electrode (item 4) mounted on a vehicle (not shown), the electrode forming part of a capacitor, a capacitance of the capacitor changing based upon a presence or absence of a user hand adjacent the electrode; and a detection circuit (Fig. 1) measuring the capacitance of the capacitor and activating the horn based upon the measured capacitance. Schulz does not teach



Art Unit: 2836

the system is used to control a vehicle horn mounted on a steering wheel. Ladewig teaches a vehicle horn switch comprising an electrode (item 5) on a vehicle steering wheel, the electrode of forming part of a capacitor (i.e. one of the two plates separated by a dielectric), a capacitance of the capacitor changing based upon a presence or absence of a users hand adjacent the electrode; and a detection circuit measuring changes output from the flexible capacitor circuit and activating the horn based upon the detected and measured changes. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the detection circuit of the Schulz on the horn activation circuitry disclosed in Ladewig in order to increase the life of the horn switch by eliminating mechanical wear.

With respect to claim 25 Schulz teaches a bridge (formed by inputs to the differential amplifier) formed by circuit including the electrode (4), the bridge circuit being balanced (no response at  $U_A$  output terminal see Fig. 2E) when no user hand is detected near the electrode, the bridge circuit becoming unbalanced (high voltage at  $U_A$  output terminal see Fig. 2E) based upon the presence of the user hand near the electrode; and a differential amplifier (components making up the differential amplifier described for example in see col. 3 line 57 – col. 4 line 11) determining when the bridge circuit is unbalanced and activating the vehicle device switch based upon whether the bridge circuit is balanced.

With respect to claim 26 Schulz teaches the capacitor is part of an oscillator (item 8) oscillating at a first frequency (outside the responsive frequencies set by component selection described in col. 3 lines 13-40) when no hand is present adjacent the

Art Unit: 2836

electrode and at a second frequency (frequency within the upper and lower cutoffs) different from the first frequency when the hand is adjacent the electrode, the detection circuit activating the horn switch based upon the frequency

With respect to claim 27 Schulz teaches the capacitance of the capacitor is changed by a change in permittivity of a medium in the capacitor, the permittivity being changed by the presence or absence of the hand adjacent the electrode.

With respect to claim 33 Schulz teaches the proximity of the user hand alters a frequency (see col. 4 lines 13-40 Schulz describes the setting of lower and upper frequency cutoffs and where the switch is responsive) of an oscillator (item 8), and wherein said step b) further includes the step of activating the switch based upon a rate of change of the capacitance caused by the proximity of the user hand.

Claims 12 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable by Ladewig (U.S. Pat. No. 3,876,977) in view of Schulz (U.S. Pat. No. 5,880,538) Ladewig teaches a method for determining a presence of a user hand including the steps of: a) measuring a change in permittivity of an area adjacent an electrode caused by the proximity of the user hand and activating a switch based upon a change measured in said step a), the switch activating a vehicle horn. Ladewig does not teach the measuring of the rate of change in permittivity. Schulz teaches measuring a rate of change (column 2 lines 1-12 the rate of change in the capacitance which is caused by the hands altering of the electric field by changing the permittivity approximate the sensor is monitored to determine if it is within a threshold indicative of a user's hand) in permittivity of an area adjacent an electrode caused by the proximity of the user hand. It would have been

Art Unit: 2836

obvious to one of ordinary skill in the art at the time of the invention to modify Ladewig to measure the rate of change in order to reduce the possibility of false detection.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Sherry/  
Supervisory Patent Examiner, Art Unit 2836

MRW